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ESSAY
ON
THE THERAPEUTIC VALUE
OF
Certain Articles of the Materia Medica
OF
RECENT INTRODUCTION,

DELIVERED BEFORE THE

NEW YORK STATE MEDICAL SOCIETY,

IN FEBRUARY, 1868.

*Presented by
Henry March*

BY

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ESSAY.

In view of the serious responsibility resting upon all practitioners of medicine, and actuated by the consideration of the duty belonging to each one to keep his colleagues advised of every additional item of experience that may from time to time accrue to him, I solicit the favor of a few minutes attention of this society for the presentation of the results of an extended and successful experience with the employment of two articles of the *materia medica*, of comparatively recent introduction. I refer to the *sulphite salts of soda*, and *glycerine*—the first as an *internal*, and the second as an *external* remedy.

With the first named, I have, during the past two years, had a most gratifyingly successful experience in a large variety of disorders, finding it to afford relief in very numerous cases, in which the usual articles of the *materia medica* adapted to previous experience have sometimes failed, but in which this article has failed in scarcely a single one of about 300 instances of its administration in those cases to which, according to my theory of its *modus operandi*, it was specially adapted.

The chemical composition of this material is as simple as that of any other salt,—its two ingredients, sulphurous acid and soda, being well known. The acid constituent, in its separate form, has been long appreciated as one of the most effective of all antiseptics and deodorizers when used externally. In fact, it is one of the most ancient disinfectants, having been originally employed in its gaseous form, generated by the simple combustion of sulphur. As an antiseptic, a preventer of decomposition and of fermentation, and as a sustainer of the natural composition of nearly all vegetable and animal materials, it appears as useful in the interior as on the exterior of the animal organization. On this principle its efficacy, as a remedial agent, is chiefly founded, but I have been led to the conclusion that it has an additional value as a promoter of digestion in cases in which the gastric juice may be deficient in some of its essential acidulous ingredients.

Preliminary to the discussion of the *modus operandi* of this

article, I ask attention to a few remarks upon the fundamental nature and character of diseases in general. Of the numerous branches of medical science which it is the duty and the interest of its practitioners to investigate and become well acquainted with, having a bearing on treatment, there is none of more profound, complicated, and important character than the *etiology* of diseases.

Upon familiarity with this department of professional knowledge, depends, in a large degree, the capability of addressing remedial as well as preventable measures. This subject applies not only to the external causes of disturbance of the physiological functions, but likewise to internal sources; in other words, to the pathological conditions provocative of the symptoms indicative of deranged action.

Every practitioner of intelligence and experience is familiar with the existence of a great number of disorders whose remote origin and true pathological character are difficult of comprehension, although their general characteristics and tendencies are well understood, as derived from repeated observations.

The mechanical organization and arrangements of the numerous and complicated structures which compose the animal body, and the physical operations by which the functions of the various organs are carried on, are as well understood by the anatomist and physiologist, as are those of the steam engine, or any other apparatus by the mechanic, and engineer—and as a general rule the mode of treatment of almost any particular disease is as plain to an experienced practitioner, as is the management of a sailing vessel in a storm by an experienced seaman. There are occasions when the force of the winds, the blasts of lightning, and the turmoil of the sea, cannot be overcome, especially with a vessel of frail structure, whereby its loss becomes inevitable. So with the human constitution; its organic structure is sometimes so feeble, and the opposition to the elements of life is so utterly overwhelming, that neither nature nor art is able to control them, and in a considerable number of the derangements with which humanity is afflicted, the remote causes are as little understood by the physiologist, as are the causes of hurricanes and of thunder by the navigator.

Some diseases are known to be of a strictly specific character, derived from the introduction into the organization of some peculiar substance to which the idea of poison is veraciously applied, and whereby the natural functions are disturbed, and in many

instances so extensively deranged as seriously to impair the vital powers, and for the modification or counteraction of which, what is known as *specific treatment*, is required. As examples of this class, we may refer to syphilis, variola, intermittent, and yellow fevers.

The *Chemistry of Physiology* must be regarded as the true quarter whence the real nature of most idiopathic diseases is to be learned. There exists no other structure so complicated, delicate, and numerously varied in its chemical combinations. In no other is there to be found so large a number of the primary elements of nature; in no other laboratory is there so great a number and variety of operations; and it is owing either to the presence of some foreign matter, to the deficiency or surplusage of one or more of the natural ingredients, or to their mal-combination, that a majority of the diseases are to be properly attributed.

Carpenter, in his work on the Principles of Human Physiology, page 535, very properly remarks: "From the part which the blood performs in the ordinary process of nutrition, it cannot be doubted that it undergoes important alterations when these processes take place in an abnormal manner. The alterations must be sometimes the causes and sometimes the effects of the morbid phenomena which constitute what we term Diseases. Thus when some local cause affecting the solid tissues of a certain part of the body, produces inflammation in them, their normal relation to the blood is altered; the consequence is that the blood in passing through them, undergoes a different set of changes, from those for which it is originally adapted, and thus its own character undergoes an alteration, which soon becomes evident throughout the whole mass of the circulating fluid, and is, in its turn, the cause of morbid phenomena in remote parts of the system. On the other hand, the strong analogy between many constitutional disorders, and the effects of poisonous agents introduced into the blood, appears clearly to point to the inference that these diseases are due to the action of some morbid matter, which has been directly introduced into the current of the circulating fluid, and which has effected both its physical and its vital properties."

The symmetry of many diseases which do not immediately depend upon external causes, necessarily involves the idea of the presence of a morbid agent in the circulating fluid. For example, palsy from lead, the agent known to be mingled with the blood, and to be deposited in the parts affected.

Among the most frequent causes of depravation of the character of the blood, is the retention in it of matters which should be removed by the excretory processes; e. g. carbonic acid, if totally retained by the lungs, will occasion death in a few minutes. The retention of the materials of the biliary and urinary secretions, is a fertile source of disorders of the system, often of fatal results.

The most remarkable cases of depravation of the blood, by the introduction of matters from without, are those in which these matters act as *ferments*, exciting such chemical changes in the constitution of the fluid that its whole character is speedily altered, and its vital properties impaired. Of the sources of blood depravity, one of the most prolific, direct, and most continually in operation, is that function upon which the entire structure of the body is dependent for its renewal and continuance, viz.: digestion and assimilation, in which must be included respiration, this being in fact the last act of digestion. Very numerous diseases are well known to derive their existence from either the imperfection of this function, or from the inclusion of improper material.

Draper, in his work on physiology, page 77, remarks: "The imputed control which the alkalinity or acidity of the digesting juices exerts in determining the result, illustrates the important function discharged by common salt, which furnishes to the juices of the stomach and intestines, the characteristic ingredients they require, by breaking up readily into hydrochloric acid and soda, and reforming at once, whenever these materials are brought in contact."

Carpenter tells us, page 503: "This fluid (gastric juice), of which the existence has been denied by some physiologists, is not very unlike saliva in its appearance; it is however distinctly acid to the taste; and chemical analysis shows that it contains a considerable proportion of free muriatic acid, and also some acetic acid. The former must evidently be derived from the decomposition of the muriate of soda contained in the blood, the remote source of which is the salt ingested with the food. Besides these principal ingredients, the gastric fluid contains muriates and phosphates of potash, soda, magnesia and lime."

Prof. Dunglison, in his Human Physiology, informs us: "The quantity of free hydrochloric acid was surprising; on distilling the gastric fluid, the acids passed over, the salts and animal matter remaining in the retort; the amount of chloride of silver

thrown down on the addition of nitrate of silver to the distilled fluid was astonishing."

Thos. Chambers, M. D., in a work on Digestion and its Derangements, pp. 83 and 85, remarks on this subject: "It may be considered settled, that for healthy digestion an excess of acid is necessary. In dogs it may be considered as settled, by the experiments of Drs. Bidder and Schmidt, that the necessary free acid in the healthy state is the hydrochloric. This is the result of eighteen experiments made upon the gastric juice of the animals named after fasting from eighteen to twenty hours, in all of which there was found free hydrochloric, and not a trace of any organic acid. On the whole, the evidence at present seems to point to the conclusion—1st. That most probably free hydrochloric acid is normally present in the healthy gastric juice when it freely exudes on the presence of a natural stimulus. 2d. That it is present in smaller quantities in man than in dogs. 3d. That in men it may be easily neutralized and rendered undiscoverable by the gastric juice being overpowered by a comparative excess of mucus or saliva—normally in excess in fasting, abnormally in disease."

Mr. Schmidt, by recent observations made on the gastric juice of a woman having a gastric fistula, calculated that 580 grammes (about 22 ounces), were secreted in an hour, which would give 14 killogrammes (525 ounces) a day, being about one-fourth the weight of the body. The following is given by Mr. Schmidt as the result of nine analyses of the gastric juice of the dog obtained as pure as possible. One thousand parts contained:

Water	973.062
Organic matter.....	17.127
Phosphate of lime.....	1.729
Phosphate of magnesia.....	0.226
Phosphate of iron.....	0.082
Free hydrochloric acid.....	3.030
Chloride of potassium.....	1.125
Chloride of sodium.....	2.507
Chloride of calcium.....	0.624
Chloro-hydrate of ammonia.....	0.468

According to M. Vulpian, it is permanently acid, in different degrees—a fact established by the experiments of Leuret, Lassaigne, Tiedman, and Gmelin.

Considering the exceeding complicated character of this fluid,

and the very profound nature of the chemico-physiological operations it is required to undergo in combination with the multiplicity of material imbibed as food and condiment, and it being the primary foundation of the "house we live in," it is clear that any deficiency in its chemical ingredients, or the presence of any material in the stomach upon which it cannot properly act, must result in deficient nutrition of the blood, and consequently of various tissues, and possibly of the whole structure of the body.

To whatever circumstance indigestion may be owing, whether to deficiency of amount of gastric juice, the privation of some of its essential ingredients, or to a defective capacity of the circulatory, or nervous functions (upon the integrity of which this function is also largely dependent), the contents of the stomach must undergo the decomposition and fermentation which invariably occur with all dead animal and vegetable matter, when confined in vessels where they are subject to the continued influences of heat and moisture. To these natural operations are due the generation of the gases which give the symptom of flatulence, pervading both the gastric and intestinal organs, also the nausea and eructation of the food so frequent in dyspepsia, and likewise the epigastric pains so distressing in many instances, together with the diarrhœa, dysentery, colic, and hepatic congestion and torpor, so frequently resulting from the presence of the foreign masses thus retained, and imparting, to a greater or less extent, foul and poisonous ingredients to the blood by absorption.

For the rectification of most of the disorders dependent upon the causes herein referred to, by the removal of the causes themselves, and the consequent restoration of the nutritive circulating fluid, whereby the tissues, secretions and functions become restored to a sound and healthy condition by the *vis medicatrix naturæ*, my experience has demonstrated the first of the articles named in the commencement of this essay, as the most effective as well as rational and scientific of all the articles of the materia medica. Thus, in the treatment of dyspepsia, there are two important objects to accomplish: first, the prevention of the decomposition and fermentation of the stomachic and intestinal contents; and second, the restoration of the gastric juice to its requisite composition and power; for both which purposes I have found in *Soda Sulphis* a most effective, active, and soundly chemical agent.

My experience with this remedy in the treatment of diarrhœa, dysentery, and cholera morbus, as well as dyspepsia, has been

decidedly beneficial. From five, to twenty, forty, or sixty grains, according to the age of the patient and the force of the symptoms, administered two, four, or six times a day, have, in almost every instance, had the effect of speedily arresting the discharges, and relieving the nausea and the colic irritation. I could cite several cases in which its efficacy has proven as prompt as any other remedy before tried, and in not one have I seen any bad effect.

As to its *modus operandi*, in these complaints, it seems to act in the double capacity of an antiseptic and astringent. On the latter principle, its influence appears sometimes almost as speedy and efficacious as opium. Its astringent property, however, seems confined to this class of disorders, as in several others in which constipation was a marked symptom, its general recuperative properties aid in restoring the natural defecatory function.

In dyspepsia, its efficiency has been most marked, especially when the disorder is accompanied with flatulence and eructations of food. These symptoms are doubtless the result of the decomposition and fermentation of the foreign material in the stomach itself, from one or more of the causes before mentioned. In such cases the sulphite salt operates, in the first place, as a direct arrester and preventive of the decomposition of the food, in the same manner as it does outside the body; and in the second place, its acid, either in its original sulphurous form or by its advancement to the sulphuric form, appears to compensate for some of the deficiency of the gastric juice, and in this way completes the digestive process as far as the gastric function is concerned.

The form of administration which I have found most useful and successful, in dyspepsia and its attendant circumstances, is in combination with tonics and carminatives, avoiding alcoholic stimulants on all occasions. My most agreeable and effective combination has proved to be: tinc. cinchona c.; tinc. card. c.; and syr. aurantia, with the sulphite salt in separate solution, combining the two at the time of administration.

It speedily arrests the fermenting process which the contents of the alimentary canal so frequently undergo, eliminating gases, producing symptoms of flatulence, and which doubtless in many cases is the cause of the diarrhea, nausea, colic and other attendant symptoms. For the arrestation of this process of decomposition, I have found no means equal to sulphurous acid, in the form mentioned. In several instances in which flatulence was a very

prominent symptom, one or two doses of the salt appear to have immediately arrested and removed it.

As an illustration of the almost uniform results derived from the use of the combination above mentioned, I quote the following remarks from a letter received from a recent member of the U. S. government, resident in Washington, for whom I prescribed it in December, 1866.

WASHINGTON CITY, *January 8th*, 1867.

DR. J. H. GRISCOM:—Dear Sir—"You remember your medical prescription. I procured it, and from taking of the first dose I felt no more of that dyspeptic trouble. I took faithfully the twelve powders and the liquid, and believe they have been of more benefit to me than all the medicine I have taken for years. Since then several of my friends have been complaining in my presence of the same trouble I had, and I have immediately given them the apothecary's No. of your prescription, and in the only report I have had, it cured the gentleman, just at it did me.

Very truly and respectfully,

Your friend and obedient servant,

B. B. FRENCH.

There is another disorder, involving derangements of the intestinal canal to a great extent, in which, though it has not fallen to my lot, during the past two years, to have obtained any experience in its treatment with this or any other remedy, having seen no case of it within that time, I yet should unhesitatingly and with full confidence administer it. I refer to *cholera asiatica*. In France, sulphuric acid, diluted in the form of a beverage, has gained a considerable reputation in the treatment of epidemic cholera, its remedial effects being attributable to its antiseptic powers, and to its influence in destroying cryptogamic parasites and organic germs. In sulphurous acid we have a preparation of the same ingredients in different proportions, possessing the same advantages combined with the additional one of being a powerful antiseptic and deodorizer, in its native form, and then, by its internal conversion into sulphuric acid, possessing all the advantageous properties of the latter.

In any disease whatever, in connection with which the digestive function is impaired, whereby the recuperative faculties of the entire system must be more or less diminished, the capacity of the sulphites in arresting the decomposition and fermentation, and

thus preventing the additional trouble and increase of derangement necessarily resulting therefrom, is a most valuable adjuvant to other treatment. A marked illustration of this is found in typhus fever, and other analogous disorders. In that species of derangement the digestive powers are manifestly reduced, at the same time they are our principal reliance for the addition of the necessary antitoxic remedies to the circulating fluid. In all zymotic diseases it may be employed with assurance of powerful aid to other remedial measures.

In the diseased condition known as scorbutus, there is a most direct demand for proper alimentary material, and therein the sulphites will be found very valuable, not only as a means of suspending the fermenting process, but also, by the agency of both its acid and alkaline ingredients, promoting the digestion itself.

But it is not alone upon the contents of the stomach and bowels, with which the salt comes in direct and immediate intercourse, that its antiseptic and antizymotic influence is exerted. This, as before suggested, is probably due to the action of the sulphurous acid derived from the decomposition of the salt, but there are many diseases of a zymotic character derived from causes wholly independent of the digestive function, upon which this agent has been found to exert a curative influence as rapid and efficacious as in those already referred to.

We have several reports in medical journals of its efficacy in intermittent, remittent and typhus fevers, in scarlatina, small-pox and measles, the theory of its action in those cases being that the acid is absorbed into the blood itself, and therein exerts its antiseptic properties directly upon the *materies morbi* which give rise to the disorders. Even in yellow fever, the real chemico-physiologic cause of which has not yet been satisfactorily made known, it was, last summer, during the prevalence of that disease in the West Indies, reported by the medical officers of the British fleet, to have produced highly favorable results. Its value in erysipelas I have had the gratification of testing in several cases. In one case in the New York hospital, found on the face of a delirium tremens patient, a few doses of the salt wholly relieved that symptom in twenty-four hours. In this particular disorder there would seem to be a very plain reason for its appropriateness, it being a disease most plainly derived from derangement of the blood, producing obstruction of the capillary circulation of the skin, thereby causing congestion and inflammation. That it is derived from some chemico-

pathologic alteration of the blood there can be no doubt, although we know not the real nature of the change.

In several cases of bronchial and pharyngeal catarrh, I have also observed singularly beneficial results from its administration in connection with local treatment, this disorder being considered as based upon the same foundation as cutaneous erysipelas.

The origin of many cases of idiopathic pneumonia, peritonitis, pleuritis, and other disorders embraced in the same nosological class, is a question of the highest scientific importance, both in relation to the nature of the disease and its treatment. In the remarks of Carpenter before quoted, relating to the changes produced upon the blood by *local causes*, thus giving rise to morbid phenomena in distant parts of the system, we have an intimation of the influence of alterations of the blood disturbing the capillary functions; whence it is easily perceivable that the so-called inflammatory affections just named may be the direct effects of morbid changes in the blood, produced by other than local causes. In the treatment of these diseases and others of similar character, such as erysipelas, gastritis, enteritis, hepatitis, and all others of idiopathic origin, it is rational to look into the chemical condition of the vital fluid, both for the origin and the means of restoring it to its healthful condition.

There is one very common disorder, the chemical origin and cause of which is now almost universally admitted, and for which chemical antitoxic treatment is very generally found available. I refer to Rheumatism, which is known to be dependent upon a hyper-acetic condition of the blood, and capable of neutralization by the use of alkaline medicines. The alkaline salt known as Tartrate of Potash and Soda has proved in latter years to be an almost uniform remedy for almost all forms of this disease.

In a recent paper on this topic by Prof. J. H. Salisbury, of the Charity Hospital Medical College, Cleveland, Ohio, contained in the last October number of the American Journal of Medical Sciences, we are presented with a very lucid exposition of the several varieties of this disorder, illustrated by microscopic expositions. He remarks "we have four or more types of rheumatism, which may be designated as follows: 1st, lithic; 2d, oxalic; 3d, cystinic; 4th, phosphatic." All of these acidulous conditions are discernable by microscopic examination of the blood, demonstrating the several primary elements by the varied character of the parent gland cells.

It is not unreasonable to suppose that these various changes are the results of imperfect digestion and assimilation, varying in character according to the nature of the dietary or functional powers of the patients—improvement in both of which may in numerous cases be secured by the subject of this essay.

The nervous system, in both its centres and branches, being also dependent for its integrity and healthful energy, upon its proper nutrition, there is equally good reason for the opinion that many of its derangements, such as hysteria, neuralgia, and even paralysis and meningitis, may be due to imperfect or deranged nutrition, as certainly as is delirium tremens; and in many such cases the use of an agent for the purification of the nutrient fluid may be found directly influential in restoring a sound condition of that organization, and likewise, as in almost all other functional disorders, it may be found to be an important adjuvant to other remedial substances. Its application in combination with nervines and anodynes I have found very useful in many instances.

A case of unexpected relief to the mental functions, derived from its administration for a physical disease, will presently be reported.

In that peculiar pathological condition of the blood and cutaneous organization which is manifested by the production of numerous furuncles, commonly known as *boils*, the administration of Soda Sulphis, in combination with carminative tonics, has proved, under my observation, a very perfect and rapid remedy. The same remark is applicable to another cutaneous disorder, dependent wholly upon gastric derangement. I refer to *urticaria*.

During the preparation of this essay, the most aggravated case of this last named disorder that I have ever seen, accompanied with eruptions over almost the entire cutaneous surface, and the most oppressive itching, came under my care. It was a lady, aged 17, who for a few days had been deprived of appetite and sleep, and was suffering severely from the excessive irritation of the rash, combined with nausea and other internal derangements. In twenty-four hours a few doses of soda sulphis, of forty grains each, entirely suspended the disease, and a local application of a solution of it upon the cutaneous surface caused immediate relief from the severe itching.

Similar beneficial results have been derived from it in a few cases of eczema.

Still another application of this salt, which I have found highly

interesting and valuable, is in the case of infants by whom their natural food (the mother's milk), is frequently rejected. A dose of two to five grains, in combination with a few drops of tinct. card. C., sweetened with a little syrup aurantia, has, in several instances, proved directly successful in causing the retention and assimilation of the stomach's contents, when administered soon after imbibition, thus greatly promoting the health and strength of the juvenile.

There are three forms of this salt, viz., the sulphite, the hyposulphite, and the bisulphite—the first of which has been my principal dependence, though the others, when employed in proportionate quantities for the supply of the acid constituent, are equally useful. The only objection to the bisulphite is its being somewhat uncertain as to the proportion of acid contained in it, unless kept in solution, as a portion of the gas is liable to escape when exposed to the air in the crystalline form.

GLYCERINE.

With regard to this remedial agent, my experience with it as an external relief for various troubles has been also very marked and interesting. Its value for these purposes is dependent upon its unique property of affinity for aqueous fluids, including the serum of the blood.

It is due to our distinguished colleague, Dr. J. Marion Sims, to state that my first intimation of this property of glycerine was furnished by his description of it given in his excellent work on Uterine Surgery, pp. 71 and 72. He therein describes his accidental discovery of its power of capillary drainage by *exosmosis*, producing a copious watery discharge, depleting the tissues with which it lies in contact in the vagina, and giving a clean, dry, and healthy appearance. He also states: "When such a dressing (a cotton tampon saturated with glycerine), is applied to a pyogenic surface on the cervix uteri for a few hours, and then removed, the cut or sore will be as clear of pus as if it were just washed and wiped dry." Having confirmed these statements by my own experience in several similar cases of uterine disorders, the inference was naturally adduced that this peculiar and active affinity of glycerine for aqueous and other fluids might be available in other disorders in which depletory treatment was indicated. I therefore determined to test its property in any other locality where there existed an inflammatory condition of the tissues, to which

the article could be applied. For example, in furuncles, erysipelas, ophthalmia, nasal inflammation, urethritis, and other inflammatory and congestive troubles. In not one of a large number of such cases have I been disappointed in the alleged tendency of the oil to drain off the serum, even through the perfect integument, and the effect has been almost as uniformly demonstrative of its depletory power as if the blood itself had been removed from the part; in fact, glycerine may be regarded as a good substitute for leeches and blisters, and in some instances for surgical operations.

The following cases illustrate the peculiar action of the article:

1st. In February, 1866, a young gentleman from a rural county, presented himself for treatment for some difficulty in voiding urine. Severe pain in the entire length of the urethra, with a burning sensation, frequent demand for micturition and irregularity in the flow, were the principal symptoms, which had existed for several weeks. Examination with the catheter developed no evidence whatever of stricture, and there was no appearance at any time of any secretion indicative of contagious disease, thus confirming the truth of the patient's assertion that he never had been afflicted with gonorrhea or syphilis. It was in fact a simple inflammation of the lining membrane of the urethra, similar in appearance to that of the fauces, and partaking of the character of mucous erysipelas. His digestive system was somewhat deranged, and his nervous and muscular organization suffered from weakness and irritability, the effects, as I concluded, of protracted confinement and deficient exercise, owing to the nature of his occupation as a bank clerk. As a local application, I directed glycerine, combined with sulphate of zinc, in the proportion of dr. ss. to oz. j, to be injected into the urethra twice a day, and to be pressed inward towards the bladder as far as possible. The result was, a complete removal of the inflammatory condition of the part, and its restoration to perfect health in a few days.

The influence of this article in subduing cutaneous erysipelas, I have found equally efficacious. In two recent cases of this disease, involving the entire facial surface, its application was by means of a muslin mask partially saturated with it. In all these cases it was employed as an adjunct to internal treatment, the diseases being regarded as local results of constitutional disturbance calling for correctives, the principal of which was the article before noticed, soda sulphur. In no instance of the very numerous cases of erysipelas, in both hospital and private practice, had I

before observed so speedy a relief of the local trouble as by glycerine.

The same happy effects have been observed in a few cases of simple ophthalmia, but the most remarkable exhibitions of its depletory power that have fallen under my observation, have been in the complete and speedy reduction and removal of carbuncular and suppurative tumors, in illustration whereof I present the following cases:

2d. A young male member of my own family was afflicted with a large furuncular inflammation on the right side of the lower jaw. It progressed rapidly towards an abscess, and was finally relieved by the lancet. Immediately on the termination of this, a similar inflammatory swelling of the chin occurred, threatening the same result to a greater extent. With the hope that it might be arrested, I directed the continual application of a batch of cotton saturated with pure glycerine, and equally to the surprise and gratification of all concerned, the tumefaction wholly disappeared in three days, and the parts were restored to their perfectly normal state.

3d. Another case soon after occurred, equally happy in the result. On the 15th of August last, a young married lady was delivered of her first child. The process of lactation, within the first week, was greatly interrupted by obstructions of the mammary glands; and complicated with this, there appeared an enlargement of a gland in the right axilla, which increased, in two or three days, nearly to the size of a hen's egg. Here was a threatened abscess, which of course gave rise to great anxiety, with all concerned in the well being of the new made mother. Under ordinary experience, the indication would have been to promote the purulent development as rapidly as possible, by poultices, &c. But hoping to avoid this usual and painful issue, I ordered constant applications of glycerine by cotton tampons, and equally surprising and gratifying as in the former case, the tumor rapidly decreased, and in four days was totally gone.

It sometimes happens that the cutaneous covering of such tumors becomes so dense that its secretory function is completely suspended, in which case the absorbent action of glycerine is entirely prevented. The mode of overcoming this obstruction is illustrated by the following two cases:

4th. Mr. H. E., in November 1867, had an inflammatory swelling on the right nates, adjacent to the anus, assuming a carbuncular

appearance, rendering walking very painful and sitting impossible. The surface was very red and tender to the touch. Thorough applications of glycerine for three or four days, renewed every twelve hours, failed to produce any reduction of the tumor, or of the cutaneous inflammation, whereupon poultices were applied, which in a day or two caused a removal of the epidermis. Supposing this would remove the obstruction to the osmotic action of the glycerine, its application was renewed, and the effect was a rapid withdrawal of the serum, and in two days the tumor was so removed that the patient could sit comfortably on a hard chair.

5th. About December 1, a young widow exhibited an enlargement of the right parotid gland, which rapidly increased both in size and pain, accompanied with enlargement of the right tonsil, and general congestion of the fauces. A single application of vaporized solution of alum relieved the latter considerably, and two additional applications, twenty-four hours apart, cured it entirely. In reference to this particular point of the case, I refer to the merits of another article, a recently introduced preparation of a well known medicinal fruit, the *rhus glabrum*. This sumac berry is known to contain large proportions of tannic and malic acids, and it has long been employed as an astringent gargle for inflamed and ulcerated fauces, in the form of a simple aqueous infusion. A new mode of its preparation for this purpose has recently been presented to us by a scientific gentleman, Mr. E. G. Holland, which I have found in several instances much more effective, and far more agreeable to the patients, its formula sometimes authorizing it to be swallowed after gargling, instead of being rejected as is required by the aqueous infusion. It is known among apothecaries as *vinum rhus glabrum*. A recent article in the Medical and Surgical Reporter, fully explains the merits of this new preparation, which my experience has fully confirmed. Its tonic and astringent properties are also valuable for hemorrhoids, and rectal hemorrhage. Glycerine was subsequently applied by cotton charpie to the parotid swelling, but during the first three or four days it rendered no service, and there appearing some tendency to suppuration, flax seed poultices were substituted for a few days, but no pus made its appearance. A blister was then put on to remove the epidermis, after which glycerine was applied, and the effect was so rapid a reduction of the tumor, that in about six days it wholly disappeared.

6th. A case of otitis, occurring in a middle aged female, accom-

panied with considerable purulent discharge, was first treated by vesication behind the ear, but with no beneficial effect; after which the application of glycerine by cotton plugs in the external meatus, greatly relieved it in three days.

I might present several other cases of various kinds of external inflammatory troubles relieved by the same measures, but deeming those already reported sufficiently illustrative of the peculiar capacity of this unique fluid, I will close the subject by the statement of a professional colleague, an army surgeon of extensive experience, giving an account of the effects upon his own person of both the articles constituting the subject of this essay.

On the 17th of July, seeing him at his home at Inwood, while suffering with a carbuncle on the nates, I suggested for him the use of sulphite of soda internally, and glycerine externally, and three days after I received a note from him containing the following sentence: "I have taken dr. j of the sulphite of soda daily since you were here. My mouth and tongue are perfectly clean and sweet, and I think its effects were soon felt in a clearing of the mind of confusion and blues."

About a month afterwards, having got entirely well and resumed his official duties in the city, he sent me the following additional confirmation of the qualities of both articles:

RECRUITING RENDEZVOUS, }
115 CEDAR ST., N. Y., Aug. 16th, 1867. }

Dear Doctor—According to your request, I will report the effect I noticed from the employment of sulphite of soda and of glycerine, on my own person while using them under your direction for carbuncle. After taking twenty grains, three times a day, of the sulphite of soda, I noticed that a peculiar confusion of mind and heaviness of the head passed away, leaving the mind clearer than it had been for a long time before. In a week before taking this agent, my bowels had been immensely disturbed at times with flatus, but on the second day after commencing it, the accumulation of gas ceased altogether. Another effect noticed was, almost an absence of odor to the stools, which were rendered quite black. The glycerine was applied directly to the carbuncle on cotton batting saturated with it, and covered with oil silk. The effect of this upon the carbuncle was to reduce it by exosmosis, the evidence of which was seen by the accumulation of a serous fluid in considerable quantities in the cotton. After the applica-

tion of glycerine, off and on for three days, there appeared on the carbuncle seven small openings, from which a bloody serum drained away slowly, and after this stage the glycerine was left off and warm water applied in its stead, but in the same way.

Very respectfully,

Your ob't servant,

EDWARD P. VOLLUM,

Surgeon, U. S. A.

Dr. J. H. GRISCOM, 42 E. 29TH ST., N. Y.

Last week a new experience of this valuable property of glycerine occurred to me. An infant aged five weeks, was afflicted with a considerable enlargement of both mammary tissues, including the nipples, which in my former experience has generally resulted in abscesses. In this case, the application of glycerine caused the entire removal of the swelling in less than forty-eight hours.

Having thus presented the results of my own experience in the treatment of several diseases (which has been additionally confirmed since the preparation of this essay), I will conclude by expressing the opinion respecting the internal remedy (soda sulphis), that there can be named scarcely any form of disease in which it may not be found useful for the restoration of the functions of the organization to a natural state, by promoting effective assimilation, and thus producing a healthful nutrition of the whole structure. In numerous cases of diseases which have no apparent direct connection with the digestive or assimilative function, I have used it in addition to other articles which the experience of ages has proved appropriate and useful, under the impression that its value as an antiseptic and promoter of sound nutrition, would naturally aid other specific remedies in the restoration of health, and in many instances the truth of this theory has been fully confirmed.

